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(54) **SPINDLE ASSEMBLY FOR A TIRE INFLATION SYSTEM**

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See application file for complete search history.

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(57) **ABSTRACT**

A spindle assembly for a tire inflation system having a spindle defining an axial direction and a fluid conduit. A rotatable part is rotatably mounted on the spindle and has a fluid passage. The fluid passage is configured to be in fluid communication with a pneumatic tire. A dynamic annular seal chamber is also provided. The annular seal chamber is disposed radially between the spindle and the rotatable part. The fluid conduit and the fluid passage are in fluid communication with each other through the annular seal chamber. The annular seal chamber is disposed axially between a first volume and a second volume. The first volume and the second volume are in fluid communication with each other through at least one fluid channel for leading fluid leaked out of the annular seal chamber and leaked into the first volume and/or into the second volume through the fluid channel.

17 Claims, 11 Drawing Sheets